

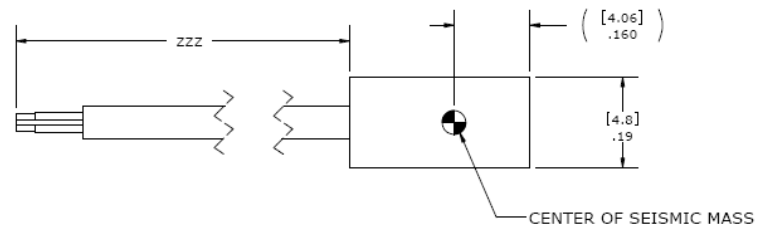
# Model 52M30 Accelerometer

Small Size, Light Weight  
Jacketed & Shielded Cable  
Silicon MEMS Technology  
±50g to ±6000g Ranges



The **Model 52M30** accelerometer has an advanced piezoresistive MEMS sensing element which offers excellent dynamic range and stability. This unit features a full bridge output with an operating temperature range from -40 to +90°C and measurement ranges of ±50g to ±6,000g. A slight amount of gas damping provides outstanding shock survivability and a flat amplitude response to 7kHz.

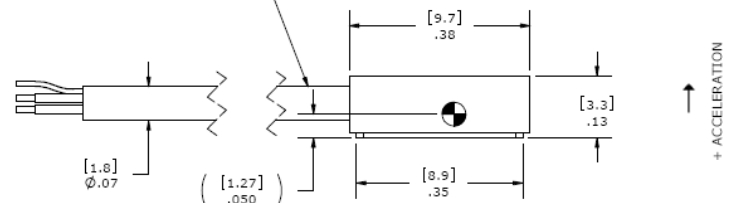
## dimensions



## FEATURES

- 2-10 Vdc Excitation
- ±50g to ±6,000g Ranges
- DC Response
- ±10,000g Shock Protection
- Transverse Sensitivity <3%
- 26kHz Resonant Frequency
- Linearity ±1%
- Output Ratiometric to Excitation

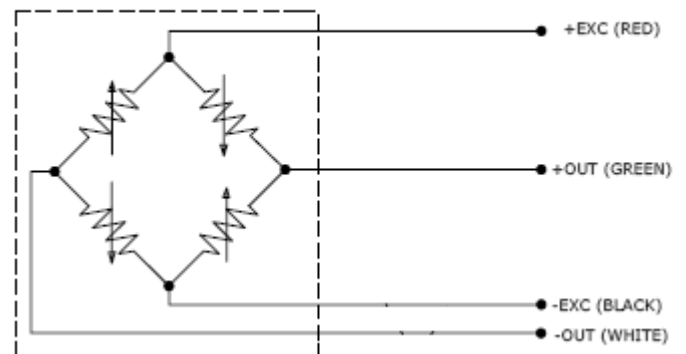
4x, #32 AWG CONDUCTORS PFA INSULATED,  
BRAIDED SHIELD, POLYURETHANE JACKET



## APPLICATIONS

- Automotive crash testing
- High impact research
- Biomechanical studies
- Shock testing

ACCELEROMETER COVER



# Model 52M30 Accelerometer

## performance specifications

All values are typical at  $\pm 24^{\circ}\text{C}$ , 100 Hz and 10 Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1004 for Plug & Play DC Accelerometers.

### Parameters

#### DYNAMIC

	$\pm 50$	$\pm 200$	$\pm 500$	$\pm 2000$	$\pm 6000$	Notes
Range(g)						
Sensitivity (mV/g) <sup>1</sup>	2.0	0.9	0.4	0.15	0.10	
Frequency Response (Hz)	0-400	0-600	0-800	0-2000	0-3000	$\pm 2\%$
	0-1000	0-1400	0-2000	0-5000	0-5000	$\pm 5\%$
	0-1400	0-1900	0-2800	0-7000	0-7000	$\pm 1\text{dB}$
Resonant Frequency (Hz)	4000	8000	15000	26000	26000	
Non-Linearity (% FSO)	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	$\pm 1$	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	
Shock Limit (g)	5000	5000	5000	5000	10000	

#### ELECTRICAL

Zero Acceleration Output (mV)	< $\pm 50$					
Excitation (Vdc)	2 to 10					
Input Resistance	2400-6000					
Output Resistance ( $\Omega$ )	2400-6000					
Insulation Resistance (M $\Omega$ )	>100					@100Vdc
Ground Isolation	Isolated from mounting surface					

#### ENVIRONMENTAL

Thermal Zero Shift (%FSO/ $^{\circ}\text{C}$ (%FSO/ $^{\circ}\text{F}$ ))*	$\pm 0.05 (\pm 0.03)$					$0^{\circ}\text{C}$ to $+50^{\circ}\text{C}$
Thermal Sensitivity Shift (%/ $^{\circ}\text{C}$ (%/ $^{\circ}\text{F}$ ))*	$-0.20 \pm 0.05 (-0.11 \pm 0.03)$					$0^{\circ}\text{C}$ to $+50^{\circ}\text{C}$
Operating Temperature ( $^{\circ}\text{C}$ )	-40 to +90					
Storage Temperature ( $^{\circ}\text{C}$ )	-40 to +90					
Humidity	Epoxy Sealed, IP61					

#### PHYSICAL

Case Material	Anodized Aluminum					
Cable (Integral 30 Foot Cable)	4x #32 AWG PFA Insulated, Braided Shield, PU Jacket					
Weight (grams)	0.5					Cable not included
Mounting	Adhesive					

<sup>1</sup> Output is ratiometric to excitation voltage

**Calibration supplied:** CS-SENS-0100 NIST Traceable Amplitude Calibration at 100Hz

**Optional accessories:** AC-D02346 Triaxial Mounting Block  
121 3-Channel Precision Low Noise DC Amplifier  
140 Auto-zero Inline Amplifier

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## ordering info

PART NUMBERING Model Number+Range+Cable Length+Options

52M30-GGGG-CCC-ZZ

| | | Options  
| | Cable (360 is 360 inches)  
| Range (0500 is 500 g)

Optional Dash Numbers

-01 5Vdc Calibration  
-02 2Vdc Calibration

Example: 52M30-0500-360

Model 52M30, 500g Full Scale Range, 360 inches cable, No Options